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Forensic Science Forum

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FORENSIC SCIENCE FORUM

Spring 2013

Happy New Year!

We hope you had a wonderful holiday season. Just a reminder: Meet with your advisor at least once a semester to keep informed of changes in major requirements and make sure you are on track to graduate. Always bring your major form (already filled out) and roadmap to advising appointments, along with an unofficial copy of your transcripts. Major forms and road maps link: <http://justicestudies.sjsu.edu/degrees/b-s-forensic-science/>

2013 Forensic Science Student Internship Panel

In this tough job market, an internship can give you the critical, hands-on experience you need to land your first job. We hope you will join us for the first annual Forensic Science Student Internship Panel to learn about some of the internships available, and talk directly with former student interns.

Tuesday, February 12
12pm-1pm
MacQuarrie Hall 526

Corissa Harris

Santa Clara County Crime Lab
US Secret Service
Thermo Fisher Scientific

Teresa Costanzo & Helen Du

San Mateo County Latent Finger Print Unit

Carmen van Gastel

Santa Clara County Coroner's Office

Samantha Peek

Bureau of Alcohol, Tobacco, Firearms and Explosives

FSS News

Spring 2013 meetings of the FSS will be held every other on Mondays (Feb 4 & 18, March 4 & 18, April 1, 15, & 29), from 3:30-4:30, in the Pacifica Room of the Student Union.

Upcoming events include the JS Confidence Challenge in April (see p.4), and "Nightlife" at the Cal Academy of Sciences in SF. Ongoing events include Friday Donuts and Study Group. Please contact the FSS for more info: sjsu.fss@gmail.com

Congratulations Fall 2012 Grads!



Photo: Stan Olszewski/SOSKphoto.com

Kait Badeaux, Jasmeet Deol, Corissa Harris, Rachel Lopez, Liliana Mendiola, Erika Riparip, and Ryan Yee.

FS Holds First Convocation

-Kait Badeaux, FS Bio 2012

On December 11, friends and families of the SJSU Forensic Science Class of 2012 joined seven fall graduates in celebrating their achievement. The small and intimate convocation ceremony was held at the Santa Clara County Crime Lab, and included an inspiring group of speakers: Dr. Cynde Holt (Senior Marketing Manager at Illumina), Natasha Alexenko (Spokeswoman and Founder of Natasha's Justice Project), Dr. Ian Fitch (Director of SCCCL) and Sgt. Bruce Wiley (Criminal Investigator for Santa Clara County), and our own Dr. Steven Lee. Touching on biology, chemistry, crime scene techniques, internships, and interview skills, speakers imparted guidance and wisdom to the graduates.

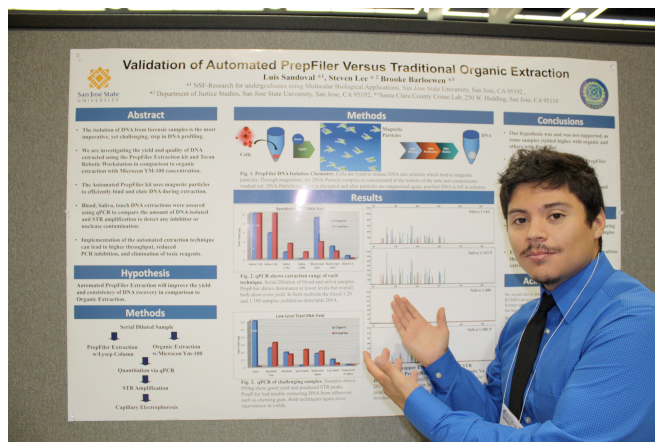
This day marked the first ever Forensic Science Convocation ceremony at SJSU. Congratulations to the graduates who started a new kind of tradition at San Jose State! Keep in touch!

Representing Forensic Science Research at the SACNAS 2012 National Conference

-Luis Sandoval, FS Bio 2013

This past October I was fortunate enough to attend the Society for Advancement in Chicanos and Native Americans in Science (SACNAS) annual conference. The five day conference was held in beautiful Seattle, Washington, and consisted of students presenting research posters, graduate schools promoting and recruiting prospective students, and valuable workshops at which graduate students, admissions boards, and directors of graduate schools and internships provided insight on applying to these programs. One of my favorite experiences at the conference was the feeling that I actually fit in with this enormous group of students and doctorates who were eager to share their research. Another was meeting a fellow undergraduate (from Texas A & M University) who is conducting research on Alzheimer's and how DNA alterations in the neighboring non-coding regions affect the disease's intensity. Coincidentally, her career goal is to work as a biologist in a crime lab someday. I told her that I had interned at a crime lab and that the type of STR sequencing techniques she performed in her research were similar to the type I had performed. We shared contact information and I agreed to be as supportive as possible if she ever decided to apply to the Santa Clara Crime Lab.

At the conference I was proud to present my poster which summarized the research I conducted last summer at the Santa Clara County Crime Lab. My research concentrated on the isolation of DNA from forensic samples -- the most imperative, yet challenging, step in DNA profiling. Biological samples at crime scenes are found in a variety of adverse conditions that expose the DNA to inhibitors and nucleases, all which impede STR profiling. Our goal in the lab was to investigate the yield and quality of DNA extracted from samples using the new PrepFiler Extraction kit and Tecan Robotic Workstation, in comparison to organic extraction with Microcon YM-100 concentration.



The PrepFiler kit uses magnetic particles and salt-forming biochemistry to enable extremely efficient DNA binding and recovery. We hypothesized that the PrepFiler extraction kit would improve the yield and consistency of DNA recovery over organic extraction. The validation study of the PrepFiler included testing blood and saliva samples in a variety of concentrations to address sensitivity, reproducibility, and accuracy. Biological material on phones, credit cards, hats, and chewing gum was also extracted and evaluated in a substrate study. The performance of both extractions were assayed using qPCR to compare the amount of DNA isolated and STR amplification to detect any inhibitor or nuclease contamination. The results showed that organic extraction had better recovery and sensitivity than PrepFiler with high concentrated samples. At low concentrations, PrepFiler had better recovery and sensitivity. Overall, the quality of STR peaks was not significantly different, however, the results suggest potential implementation in future workflow involving touch DNA sample, which could allow for higher throughput, reduce PCR inhibitors, and eliminate the use of toxic Phenol:Chloroform:Isoamyl Alcohol.



It's True: Internships Lead to Jobs!

-Teresa Costanzo, FS Chem 2012

Every year the San Mateo County Sheriff's Office Forensic Laboratory offers a yearlong internship in the Latent Print Unit. As an intern in 2011, I went through an extensive training program and learned about the history and physiology of fingerprints and latent print processing techniques. The training program concluded with a practical exam and a mock trial. After successfully completing training, I started processing evidence for latent prints in supervised casework, and I learned how an accredited crime lab is run.

I began to feel confident enough to start applying for jobs. Halfway through my internship, a Forensic Specialist position at San Mateo County Sheriff's Office Forensic Laboratory opened up. This was a great opportunity (since I was trained by San Mateo and I knew the people I would be working with), so I applied and got an interview. During the panel interview, I was asked a long list of questions that I had to answer to the best of my ability. Panel members were not allowed to give any feedback or ask follow-up questions, so what I said was all they had to go on. About a week later I found out that I was one of only seven people who made it through to the next-round interview and exam. This was amazing news and I was extremely excited.

The next round consisted of a more personal interview with the lab and a print comparison exam. I was nervous about the comparison exam, but I had taken FS 163 (Fingerprint Science) the previous summer so I had basic knowledge of how to make comparisons. I practiced comparisons until I couldn't practice anymore. The timed exam involved comparing as many fingerprints as possible. If I made just one mistake, I would be out of the running. The pressure was intense. After the exam, I interviewed with the lab director and latent unit supervisor. The purpose of this interview was to get to know the candidate as a person. It was more conversational and completely different from the panel interview. I walked out of it feeling *horrible*. I thought, "Well at least I have

some experience with interviews now, and there is always graduate school..." (my backup plan).

There were two positions available; five interns had applied, plus two outside candidates. My chances felt slim. The following week, each intern who had applied was called in separately to get the news. To my amazement, I got the job! It was the best feeling in the world to know that all my hard work at school and in the internship had paid off, and only five months after graduation from San Jose State! It felt unreal.

After passing the background investigation, I was officially offered the job. As an employee, I began a new training program: latent print examinations (LPE). I am currently still in training and have a long way to go; my training will include pattern recognition, comparisons, palm prints, AFIS, and courtroom testimony. I will eventually also train to do crime scene investigations, after which I will respond to crime scenes in San Mateo County.

The internship at San Mateo County Sheriff's Office Forensic Laboratory has opened many doors for me and for other interns who have gone through the program. I was hired with five other interns, and all of us currently have jobs in the forensic field around the country. It was a great experience and opportunity for all of us and I am so grateful that San Mateo County offers such an amazing internship program. If you are interested in applying for next year's internship program, the application is due in March 8, 2013. Applications are available on Juno's website, or here:

<http://www.smcsheriff.com/divisions/multi-jurisdictional-services/forensic-laboratory>

FS Grad: Will Work For Food

-Amy Griffin, FS Bio 2011



When I was an undergraduate forensic student at SJSU I knew I was very passionate about forensic science, and couldn't wait to get started in a real crime lab working real casework. The only problem (which didn't occur to me until mere months before graduating) was that I wasn't quite sure what type of unit I wanted to work in someday, or whether I would be happier doing field work or laboratory work. **(SEE FOOD, NEXT PAGE)**

AS REAL AS IT GETS!

*Third Annual Confidence Challenge hosted by
the Justice Studies Student Task Force*

-Jan Hagemann



On April 12, 2013 we will be holding the 3rd Annual Justice Studies Confidence Challenge. This event was created by a group of representatives from the three Justice Studies Student groups: Alpha Phi Sigma (National Criminal Justice Honor Society), Chi Pi Sigma (Criminal Justice Fraternity) and Forensic Science Students. The competition will be between teams of JS students and the JS department faculty. Teams will compete in a friendly but challenging version of the physical agility test for law enforcement with a creative twist. After the competition, there will be a barbeque and award ceremony.



The purpose of this competition is to give those of us interested in law enforcement an idea of the physical challenges that must be met by law enforcement candidates and, more importantly, it promotes camaraderie and companionship throughout the Justice Studies Department. Get involved! And check out the youtube video of the 2011 Confidence Challenge:

<http://www.youtube.com/watch?v=pgYYtuguTBk>

(FOOD, CONT.) At the forceful urging of Mary Juno I applied for the internship at the San Mateo County Sheriff's Office Forensic Laboratory, figuring I didn't have much a chance. Somehow, somehow, I was chosen for one of the coveted spots, which I was sure at the time was some sort of mix up. Mix up or not, I was in! Thanks to my year interning as a latent print processing technician, I learned that I wanted to work in fingerprints.

I have been very fortunate since graduating from SJSU in the spring of 2011. I went straight from interning at San Mateo to being offered a position as an APFIS Technician at the Austin Crime Lab. And yes, I mean Texas. It has been such a great experience so far, and even though picking up and moving half way across the country was really scary, I'm glad I did it.

My advice to students applying for jobs in the future would be definitely not to limit yourself just to California. I know many people don't want to leave their home towns or states, but it's a great big world out there, with new cities full of new people and new places and new experiences. If you can't pick up and move when you're young and not tied down, when can you? Plus, sorry, Texas food definitely beats California food.

In such a competitive field you cannot afford to be picky and "choose" to only work in one place or for one agency. When you are at entry level, there are dozens if not hundreds of applicants applying for that same job you want, and many have more experience than you. Contact crime labs in your area to inquire about internship opportunities, and play up the fact you are willing to work for free. People love free labor it turns out! After your internship, don't be afraid to branch out and take a chance. Getting your foot in the door at that first job is the hardest thing you have to do. Once you're in and have some experience, your options will improve... but you might just want to stay in Texas.

A Traveler and a Scholar

-Paige Knight, FS Bio 2012

Have you ever thought about going abroad for a semester, or to get your masters degree? Since I was 18 I've wanted to do it, and I finally decided to go for grad school at the urging of one of my mentors. A semester before I graduated from SJSU, I applied to the MSc in Forensic Science program at the University of Strathclyde.

In early September 2012, I packed my bags and headed to Glasgow, Scotland to begin my adventure. I arrived a week before my program started, so I had ample time to walk around Glasgow, be a tourist, get comfortable in my new city, and try to get used to the fact that their summer is the same temperature as our California winter! After a week of touring the city, I moved into the student halls.

The University has separate student living quarters for grad students, and I live in Patrick Thomas Court. At first I was worried, not knowing anyone, but I couldn't have been happier with my roommates. We have plenty in common, and since we are all from different countries, I now have many friends in new places where I can visit. A few days after settling into my new home, classes began -- thankfully only a 7-minute walk from my building.

The first week of the program was easy; all of the faculty introduced themselves and conversed with students. I socialized and became acquainted with my fellow classmates. Following the first week, we had a set weekly schedule consisting of 2 days of lecture and 3 days of lab work. Most days I was in class from 9:30am to 4:30pm, with a 2-hour lunch break, and occasional days off. I used my free days to travel, or be lazy and have a pint with my classmates.

Our masters class has 40 students, which makes getting to know people and making new friends easy. In the first semester, all students were together in the same classes and labs which made it easy to collaborate and make sure I understood everything. I was also thankful that the professors responded quickly to emails and were

available in office hours. If there was anything I couldn't figure out with a classmate, professors were glad to assist.

In the second semester, students were split off into either a biology or chemistry track. As I have a BS in Forensic Science-Biology, I opted for the chemistry program. My second semester has the same schedule of 9:30am- 4:30pm, but with a few more free days. There is a heavier workload now than in the first semester, but nothing that I can't handle if I manage my time.



Holiday fireworks in George Square, Glasgow.

Though I am thoroughly enjoying the second semester, I am really excited for what is to come in May: my placement. All students in the forensic masters program complete a 3-month internship placement in a forensic science lab as the final component of the program. Students decide where they will go for their internships, and the options include labs in Europe, the US, and Australia. I have chosen one on the US east coast.

My experience here has been amazing and I can only imagine it getting better. I've made new friends, had some crazy/fun nights out, traveled around Europe, learned about Scottish culture, and deepened my knowledge of forensic science. I highly recommend studying abroad at Strathclyde. There is no application fee, and the GRE is not required. The program is completed in one year (not two, as with masters programs in the US), and you get to live abroad! If you come, bring warm clothes, make study groups with classmates, and travel as often as you can (Easy Jet and Ryan Air are very affordable)!